

In the Claims

Please substitute the following amended claims for those currently pending:

What is Claimed is:

1. (cancelled)
2. (previously presented) The apparatus of claim 6, wherein the first guiding surface of the cam has a substantially continually changing slope.
3. (previously presented) The apparatus of claim 6, wherein the first guiding surface of the cam has a substantially continually changing radius of curvature.
4. (previously presented) The apparatus of claim 6, wherein the contact angle is defined by a first imaginary line extending through the first contact point and a central axis of the first following surface, and an imaginary reference line.
5. (cancelled)
6. (currently amended) An apparatus, comprising:
 - a cam having at least a first guiding surface;
 - a cam following assembly including a first following surface for engaging the first guiding surface of the cam at least at a first contact point, and a means for urging the first following surface against the first guiding surface of the cam;
 - the first following surface defining a contact angle with the first guiding surface of the cam; ~~and~~
 - the first guiding surface of the cam being shaped such that the contact angle of the first follower changes substantially continually as the cam following assembly moves along a longitudinal axis of the cam;

wherein the means for urging the first following surface against the first guiding surface of the cam comprises a leaf spring; and

wherein said spring is positioned between said cam and said cam following assembly.

7. (cancelled)

8. (currently amended) An apparatus, comprising:

a cam having at least a first guiding surface;

a cam following assembly including a first following surface for engaging the first guiding surface of the cam at least at a first contact point, and a means for urging the first following surface against the first guiding surface of the cam;

the first following surface defining a contact angle with the first guiding surface of the cam; ~~and~~

the first guiding surface of the cam being shaped such that the contact angle of the first follower changes substantially continually as the cam following assembly moves along a longitudinal axis of the cam;

wherein the means for urging the first following surface against the first guiding surface of the cam comprises a gas spring; and

wherein said spring is positioned between said cam and said cam following assembly.

9. (cancelled)

10. (previously presented) The apparatus of claim 6, wherein a deflection of the leaf spring varies in a manner substantially inversely proportionally to an associated variation in a trigonometric TAN function of the contact angle throughout a travel of the cam following assembly.

11. (previously presented)The apparatus of claim 6, wherein the cam is shaped such that movement of the cam following assembly along the longitudinal axis of the cam causes a deflection of the leaf spring and a change in the contact angle of the first following surface such that a magnitude of an axial force component of a reactionary force acting on the first following surface is substantially constant throughout a travel of the cam following assembly.

12 -17. (cancelled)

18. (previously presented)The apparatus of claim 6, wherein the leaf spring has a spring constant reflecting a substantially linear relationship between deflection and spring force.

19. (previously presented)The apparatus of claim 6, wherein the leaf spring has a spring function reflecting a substantially nonlinear relationship between deflection and spring force.

20. (previously presented)The apparatus of claim 6, wherein the cam is substantially symmetrical about the longitudinal axis thereof.

21-25 (cancelled)

26. (previously presented)The apparatus of claim 8, wherein the first guiding surface of the cam has a substantially continually changing slope.

27. (previously presented)The apparatus of claim 8, wherein the first guiding surface of the cam has a substantially continually changing radius of curvature.

28. (previously presented)The apparatus of claim 8, wherein the contact angle is defined by a first imaginary line extending through the first contact point and a central axis of the first following surface, and an imaginary reference line.

29. (previously presented) The apparatus of claim 8, wherein a deflection of the gas spring varies in a manner substantially inversely proportionally to an associated variation in a trigonometric TAN function of the contact angle throughout a travel of the cam following assembly.

30. (previously presented) The apparatus of claim 8, wherein the cam is shaped such that movement of the cam following assembly along the longitudinal axis of the cam causes a deflection of the gas spring and a change in the contact angle of the first following surface such that a magnitude of an axial force component of a reactionary force acting on the first following surface is substantially constant throughout a travel of the cam following assembly.

31. (previously presented) The apparatus of claim 8, wherein the gas spring has a spring constant reflecting a substantially linear relationship between deflection and spring force.

32. (previously presented) The apparatus of claim 8, wherein the gas spring has a spring function reflecting a substantially nonlinear relationship between deflection and spring force.

33. (previously presented) The apparatus of claim 8, wherein the cam is substantially symmetrical about the longitudinal axis thereof.

34. (new) An apparatus, comprising:
a cam having at least a first guiding surface;
a cam following assembly including a first following surface for engaging the first guiding surface of the cam at least at a first contact point, and a means for urging the first following surface against the first guiding surface of the cam;

the first following surface defining a contact angle with the first guiding surface of the cam;

the first guiding surface of the cam being shaped such that the contact angle of the first follower changes substantially continually as the cam following assembly moves along a longitudinal axis of the cam;

wherein the means for urging the first following surface against the first guiding surface of the cam comprises a leaf spring extending between the first following surface and a mounting block of the cam following assembly.

35. (new) The apparatus of claim 34, wherein the first guiding surface of the cam has a substantially continually changing slope.

36. (new) The apparatus of claim 34, wherein the first guiding surface of the cam has a substantially continually changing radius of curvature.

37. (new) The apparatus of claim 34, wherein the contact angle is defined by a first imaginary line extending through the first contact point and a central axis of the first following surface, and an imaginary reference line.

38. (new) The apparatus of claim 34, wherein a deflection of the spring varies in a manner substantially inversely proportionally to an associated variation in a trigonometric TAN function of the contact angle throughout a travel of the cam following assembly.

39. (new) The apparatus of claim 34, wherein the cam is shaped such that movement of the cam following assembly along the longitudinal axis of the cam causes a deflection of the spring and a change in the contact angle of the first following surface such that a magnitude of an

axial force component of a reactionary force acting on the first following surface is substantially constant throughout a travel of the cam following assembly.

40. (new) The apparatus of claim 34, wherein the spring has a spring constant reflecting a substantially linear relationship between deflection and spring force.

41. (new) The apparatus of claim 34, wherein the spring has a spring function reflecting a substantially nonlinear relationship between deflection and spring force.

42. (new) The apparatus of claim 34, wherein the cam is substantially symmetrical about the longitudinal axis thereof.